

REMARKS

In the Office Action, claims 1-22 were rejected, figures 4, 5, 8 and 11 were objected to and the disclosure, in paragraph [0025] through [0028] of the specification, was objected to. By the present Response, claims 2, 3, 10 and 17 have been cancelled; claims 1, 4, 7, 9, 11, 14, 16, 18 and 21 have been amended; and new claims 23 and 24 have been added. Corrections are made to the formal drawings and to the specification as per the Examiner's suggestions. No new subject matter has been added. Upon entry of the corrections and the amendments, claims 1, 4-9, 11-16, and 18-24 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Objections to the drawings

The Examiner has objected to Figure 4 for failing to comply with 37 C.F.R §1.84 (p)(5) because reference numerals VI, Vin and Iout were not mentioned in the disclosure. By the present response, paragraphs [0026] through [0028] are amended to obviate these issues.

The Examiner also objected to FIG. 8 for failing to comply with 37 C.F.R §1.84(p)(5) due to missing subfigure designations. By the present response, Figure 8 is amended to form two separate figures, FIG. 8A and FIG. 8B. The specification has been amended accordingly.

With regard to the Examiner's objections to the use of "uF" in lieu of "μF" for the micro-Faraday identifier in FIG. 8A and FIG. 8B (previously FIG. 8), the Applicants respectfully submit that because the figures are screen-shots of waveforms generated by the respective circuits, the identifier "uF" used as the micro-

Faraday indicator be interpreted as the micro-Faraday indicator. Applicants submit that the indicia do not present any potential for misunderstanding.

Rejections Under 35 U.S.C. §102

Claims 1-6, 9-13, and 16-20 were rejected under 35 U.S.C. §102(b) as being anticipated by Takano et al., US Patent No. 5,271,490. A *prima facie* case of anticipation under 35 U.S.C. §102 requires a showing that each limitation of a claim is found in a single reference, practice or device.

The Examiner rejected claim 1 as being anticipated by Takano et al. U.S Patent No. 5,721,490 (hereinafter referred to as “the Takano reference”). According to the Examiner, the Takano reference teaches, via Figures 10, 11a and 12, a method of operating a system having a coil, and the use of more than one current switching device to provide more than one switched current that are out of phase with one another to the gradient magnetic field coil.

Applicants respectfully point out that the Takano reference teaches the use of more than one current switching device to provide the more than one switched current to the gradient magnetic field coil. Further, the Takano reference teaches the use of a control circuit for driving and controlling each of the switching devices. The control circuit also requires a current detector to sense the current to the gradient magnetic field coil in order to alter the phase of the currents from the each of the switched current switching devices.

Applicants respectfully submit that in the present application, there is no feedback based on the current in the gradient coil. Further, the technique does not use multiple switching amplifiers to produce multiple currents that are significantly out of phase with one another. Rather, the technique, as recited in amended claim 1, calls for a transformer

(as seen in FIG. 4) and the use of an auxiliary capacitor to produce a second current (I_a) that is out of phase with a primary current (I_p). Applicants respectfully submit that in the present application, only a single switching amplifier is used to generate the multiple currents that are out of phase with each other in order to cancel the ripple in the current (I_{out}) provided to the gradient coil. Furthermore, Applicants also submit that the use of a control circuit and a feedback loop in the Takano reference also brings in an aspect of a digital circuitry operating in conjunction with an analog circuitry as compared to the purely analog nature of the circuits recited in claim 1.

Therefore, in view of at least the differences point out hereinabove, the Applicants submit that a *prima facie* case of anticipation has not been established under 35 U.S.C. §102(b), and request that rejection of claim 1 under 35 U.S.C. §102(b) be withdrawn.

Claims 4-8 depended directly or indirectly on base claim 1. Applicants respectfully submit that claims 4-8 are allowable based on their dependency on an allowable base claim as well as for the subject matter they separately recite. Therefore, Applicants request that the rejection of claims 4-8 under 35 U.S.C. §102(b) be withdrawn. Claims 4 and 7 originally depend from on claim 3. Because the subject matter of claim 3 has been incorporated in to claim 1, claims 4 and 7 have been amended to now depend from claim 1.

With respect to the Examiner's rejection of claim 9, Applicants respectfully submit that claim 9 has been amended to include a transformer. Further, Applicants submit that passages at column 12, line 37 through column 15, line 34; column 4, lines 21-40; column 5, lines 15-21; column 5, line 50 through column 6, line 8; and column 6, lines 35-43 in the Takano reference as cited by the Examiner, fail disclose the use of a transformer. Furthermore, the Takano reference teaches the use of more than one current switching device to accomplish the task of providing a current to the gradient magnetic

field coil. Therefore, for at least the reasons cited above, Applicants request that the rejection of claim 9 under 35 U.S.C. §102(b) be withdrawn.

With respect to the Examiner's rejection of claims 10-13, Applicants have cancelled claim 10 and incorporated the subject matter recited by claim 10 into claim 9 for reasons described above. Claims 11-15 depend directly or indirectly on base claim 9. Applicants respectfully submit that claims 11-15 are allowable based on their dependency on an allowable base claim as well as for the subject matter they separately recite. Therefore, Applicants request that the rejection of claims 11-15 under 35 U.S.C. §102(b) be withdrawn. Claim 11 originally depended on claim 10. Because the subject matter of claim 10 has been incorporated in to claim 9, claims 11 has been amended to now depended from claim 9.

With respect to the Examiner's rejection of claim 16, Applicants respectfully submit that claim 16 has been amended to include a transformer. Similar to the arguments above for the rejection of claim 9, Applicants respectfully submit that the Takano reference fails to disclose the use of a transformer. Furthermore, the Takano reference teaches the use of more than one current switching device to accomplish the task of providing a current to the gradient magnetic field coil. Therefore, for at least the reasons cited above, Applicants request that rejection of claim 16 under 35 U.S.C. §102(b) be withdrawn.

With respect to the Examiner's rejection of claims 17-22, the Applicants submit that claim 17 has been cancelled and the subject matter recited by claim 17 has been incorporated into claim 16. Further, Applicants respectfully submit that claims 18-20 are allowable based on their dependency on an allowable base claim as well as for the subject matter they separately recite. Therefore, Applicants request that the rejection of claims 18-20 under 35 U.S.C. §102(b) be withdrawn. Claim 18 originally depended on claim

17. Since the subject matter of claim 17 has been incorporated in to claim 16, claim 18 has been amended to now depended from claim 16.

Rejections Under 35 U.S.C. §103

Claims 7, 8, 14, 15, 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Takano et al., U.S. Patent No. 5,721,490.

Claim 7 originally depended on claim 3. Because claim 3 has been cancelled in the present response, claim 7 has been amended to depend on claim 1 instead of from claim 3. Since claims 1, 9, and 16 are believed to be allowable, Applicants respectfully submit that claims 7, 8, 14, 15, 21 and 22 are allowable at least in view of their dependency on base claims 1, 9, and 16 respectively, in addition to the subject matter they separately recite. Thus, it is respectfully requested that the rejections of claims 7, 8, 14, 15, 21 and 22 under 35 U.S.C. §103(a) be withdrawn.

New Claims

By the present response, new claims 23 and 24 have been added by including the subject matter represented by claims 9-13 in the original application. No new subject matter has been added.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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IN THE DRAWINGS

Please replace sheet 7 of the formal drawings previously filed in the application with the amended replacement sheet appended to this Response.